

“the Kunselman et al. patent”) in view of U.S. Patent No. 5,510,273 to Quinn (hereinafter the Quinn patent”). Applicants are traversing the rejection.

Claim 1 provides for an optical device. The optical device includes, *inter alia*, a flexible sensor array in close contact with a surface of a support element and having a surface with a shape corresponding to a focal surface.

The Office Action, on page 2, recognizes that the Kunselman et al. patent fails to teach or suggest (a) a support element having a shape corresponding to a focal surface, and (b) a flexible sensor array. Thus, the Office Action suggests that the Quinn patent discloses these features.

The Quinn patent is directed toward a method of assembling a chip array having a plurality of chips spaced a predetermined distance from one another (col. 2, lines 60 – 62). FIG. 2 is a view showing a substrate 10 with chips 12 tacked thereon (col. 3, lines 62 – 64). At col. 4, lines 14 – 18, the Quinn patent states:

Because the entire surface of substrate 10 is curved, while the corresponding surfaces of the chips 12 remain planar, it will be apparent that the surfaces of the chips 12 in tacked contact with substrate 10 do not exactly conform to the shape of the surface of substrate 10. (emphasis added)

At col. 4, lines 19 – 21, the Quinn patent states:

Further, the straight chips 12 placed on the curved surface of substrate 10, even when they are pushed together, will contact each other only at the top corners thereof. (emphasis added)

At col. 4, lines 28 – 32, the Quinn patent states:

Thus, in general, each individual silicon chip 12 will contact the surface of substrate 10 only at the bottom corners thereof along the length of the array formed by the chips, and will contact adjacent chips in the array only at top corners thereof. (emphasis added)

FIG. 3 of the Quinn patent shows chip 12b in relation to the curved surface of substrate 10 (col. 4, lines 33 – 35), with a space t_a therebetween. Space t_a as well as a length of chips 12 and a thickness of chips 12 are considered in a calculation of spacing between chips 12 (col. 5, lines 23 – 38), such that after the substrate 10 is released from the work surface, and substrate 10 returns to its straight shape, a desired spacing d between the parallel adjacent surfaces of neighboring chips is obtained (FIG. 4 and col. 6, lines 17 – 20). That is, when substrate 10 returns to its straight shape, chips 12 retain their individual shapes to provide for the desired spacing.

Whereas the Quinn patent describes chips 12 as (a) remaining planar, (b) not exactly conforming to the surface of substrate 10, (c) being straight chips, (d) contacting surface 10 only at the bottom corners of substrate 10, and (e) retaining their individual shapes to provide for a desired spacing, **the Quinn patent does not describe the array of chips 12 as being a flexible sensor array, as recited in claim 1.**

Applicants respectfully submit that the Kunselman et al. and Quinn patents, whether considered independently or in combination with one another, neither describe nor suggest all of the elements of claim 1. Thus, claim 1 is patentable over the cited combination of the Kunselman et al. and Quinn patents.

Claims 2 – 8 depend from claim 1. By virtue of this dependence, claims 2 – 8 are also patentable over the cited combination of references. Nevertheless, Applicants wish to review particularly distinctive features of claims 3 and 5.

Claim 3 depends from claim 1, via claim 2, and further recites that the flexible structure conforms to the shape of the surface of the support element. As mentioned above, in a passage at col. 4, lines 14 – 18, the Quinn patent expressly states that the surfaces of chips 12 **do not exactly conform** to the shape of the surface of substrate 10, and at col. 4, lines 28 – 32 states that each individual chip 12 will contact substrate 10 **only at the bottom corners**. Thus, the Quinn patent, and consequently the cited combination of references, does not disclose that the flexible structure **conforms** to the

shape of the surface of the support element, as recited in claim 3. Accordingly, claim 3 is patentable over the cited combination of references not only because of its dependence on claim 1, but also on its own merits.

Claim 5 depends from claim 1, via claim 2, and further recites that the flexible structure has a thickness in a range from 1 micrometer to 0.1 millimeter. The Office Action, on page 3 recognizes that the Kunselman et al. patent as modified by the Quinn patent fails to teach or suggest this feature, but states that it would have been obvious to "modify the thickness of the substrate of Quinn" (emphasis added). As a first point, Applicants wish for the Examiner to note that claim 5 is directed toward a flexible structure rather than an element (i.e., substrate) with which the flexible substrate is in contact. Moreover, as a second point, the Quinn patent describes the thickness of chips 12 as being approximately 17 mils (col. 3, line 36) or 432 μm (col. 5, line 56). 17 mils and 432 μm are both more than four times greater than 0.1 millimeter, therefore, the range from 1 micrometer to 0.1 millimeter, as recited in claim 5, cannot be regarded as obvious in view of the Quinn patent. Accordingly, claim 5 is patentable over the cited combination of references not only because of its dependence on claim 1, but also on its own merits.

Independent claim 9 recites a flexible sensor array. Thus, claim 9, for reasons similar to that provided above in support of claim 1, is patentable over the cited combination of the Kunselman et al. and Quinn patents.

Claims 10 – 19 depend from claim 9. By virtue of this dependence, claims 10 – 19 are also patentable over the cited combination of references. Furthermore, claim 16 includes a recital similar to that of claim 5, as described above, and so, is patentable over the Kunselman et al. and Quinn patents for reasoning similar to that provided in support of claim 5. Hence, claim 16 is patentable not only because of its dependence on claim 9, but also on its own merits.

Independent claim 20 recites a flexible sensor array, and independent claim 21 recites a flexible semiconductor array. Thus, for reasons similar to that provided above in support of claim 1, each of claims 20 and 21 are also patentable over the cited combination of references.

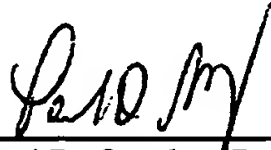
Applicants respectfully request reconsideration and withdrawal of the section 103(a) rejection of claims 1 – 21.

In view of the foregoing, Applicants respectfully submit that all claims presented in this application patentably distinguish over the prior art. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Respectfully submitted,

Date

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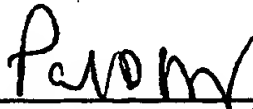
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July 15, 2004
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